

Serial No. 10/812,983
Amendment Dated: December 22, 2005
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Attorney Docket No. 056205.52950C1

Amendments to the Abstract:

Please delete the original Abstract presently in the application and replace it with the substitute Abstract submitted herewith on a separate page. A clean and marked-up copy of the substitute Abstract are attached.



ABSTRACT

A compression ignition internal combustion engine includes a combustion chamber, an intake valve 19a, intake port 6, and an exhaust valve 19b. The temperature and pressure in the combustion chamber are increased to self-ignite an air-fuel mixture with the compressive operation of a piston after closing of the intake valve 19a. A fuel injection valve 11 injects pressurized air, serving as an ignition trigger factor, directly into the combustion chamber so that the air-fuel mixture under the expansion stroke of the piston is brought into an ignitable state. An ECU 1 controls the injection timing of the pressurized air depending on the ignition timing. The self-ignition timing can be controlled to a proper timing in a wide engine operating range with respect to a load and a revolution speed without changing the shape of the combustion chamber to a large extent.